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Secretome of Intestinal bacilli: A natural guard against pathologies

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Abstract

© 2017 Ilinskaya, Ulyanova, Yarullina and Gataullin. Current studies of human gut microbiome usually do not consider the special functional role of transient microbiota, although some of its members remain in the host for a long time and produce broad spectrum of biologically active substances. Getting into the gastrointestinal tract (GIT) with food, water and probiotic preparations, two representatives of Bacilli class, genera Bacillus and Lactobacillus, colonize epithelium blurring the boundaries between resident and transient microbiota. Despite their minor proportion in the microbiome composition, these bacteria can significantly affect both the intestinal microbiota and the entire body thanks to a wide range of secreted compounds. Recently, insufficiency and limitations of pure genome-based analysis of gut microbiota became known. Thus, the need for intense functional studies is evident. This review aims to characterize the Bacillus and Lactobacillus in GIT, as well as the functional roles of the components released by these members of microbial intestinal community. Complex of their secreted compounds is referred by us as the "bacillary secretome." The composition of the bacillary secretome, its biological effects in GIT and role in counteraction to infectious diseases and oncological pathologies in human organism is the subject of the review.

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Keywords

Bacillus, Gastrointestinal tract, Lactobacillus, Metabolites, Secretome

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